



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,511	08/27/2001	Meng-Huang Liu	3626-0219P	1034
2292	7590	12/26/2003	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			BENENSON, BORIS	
			ART UNIT	PAPER NUMBER
			2836	
DATE MAILED: 12/26/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/938,511	Applicant(s) LIU ET AL.	
	Examiner Boris Benenson	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: _____ |

Response to Argument

1. Applicant convincingly argue that an electrostatic discharge protective circuit disclosed by Chang et al (6,469,560) will function differently than an EDS protection circuit of current application. Nevertheless rejection is based not on functional similarity, but on a fact that the language of Claims 1 and 3 allow such interpretation that inventions become undistinguishable. Claim 1 includes as a limitation: "the first electrode is connected to the power supply". In a broad interpretation it may means connected directly, connected through a resistor, connected through a capacitor or connected through a semiconductor. A similar limitation included in the language of Claim 3 and for the reason discussed above the rejection stands.

Applicant's argument that it is not obvious to duplicate the circuitry of Claim 1 to protect the mixed-voltage integrated circuit is not convincing.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claim 1 rejected under 35 U.S.C. 102(a) as being anticipated by Chang et al. (6,469,560). Chang et al. disclose an electrostatic discharge protective circuit comprising a

Art Unit: 2836

resistive device (Fig.4, Pos. R1) that has one end connected to power supply (Vcc), a capacitor device (C1), which is connected in series between the resistor device and ground and a PMOS device (P2). PMOS comprises a gate electrode, a first electrode, a second electrode and a bulk electrode. The gate electrode is connected between the resistor device and the capacitor device, the bulk electrode is interconnected to the first electrode and the first electrode is connected to the power supply.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3,5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (6,469,560). Chang et al. disclose an electrostatic discharge protective circuit comprising a resistive device (Fig.4, Pos. R1) that has one end connected to power supply (Vcc), a capacitor device (C1), which is connected in series between the resistor device and ground and a PMOS device (P2). PMOS comprises a gate electrode, a first

Art Unit: 2836

electrode, a second electrode and a bulk electrode. The gate electrode is connected between the resistor device and the capacitor device, the bulk electrode is interconnected to the first electrode and the first electrode is connected to the power supply. Chang et al. didn't disclose protection circuit for protection a mixed-voltage integrated circuit, where some part of the mixed-voltage integrated circuit is powered by different power sources (V_{cc1} , V_{cc2} ...). It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the protection circuits, disclosed by Chang et al., to each of power sources and connect the second electrode of the protection circuits to common potential (V_{ss}) read on common bus, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. V. Bemis Co.*, 193 USPQ 8.

Referring to Claims 5 and 6, voltage level of multiple power supplies does not change basic design of the circuitry. It would have been an obvious matter of design choice to use circuitry with core logic operating on power level different then power level of input/output circuitry, since applicant has not disclosed that use of protective circuit for equal or not equal voltages solves any stated problem or is for any particular

purpose and it appears that the invention would perform equally well with multiple power supplies of equal or not equal voltages.

Referring to Claim 7, it is well known that the potential (V_{ss}), which is usually grounded, should have a very low resistance and therefore it is well known in the art use of ground buses.

4. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (6,469,560) in view of Mentzer (5,535,086). Chang et al. disclose an electrostatic discharge protective circuit comprising a resistive device (Fig.4, Pos. R1) that has one end connected to power supply (V_{cc}) and a capacitor device (C1), connected on one end to the resistive device and to the ground on the other end. Chang et al. didn't disclose parameters of the RC circuit (R1, C1). Mentzer teaches that "the RC time constant circuit of the ESD protection circuit is typically constructed with a time constant in microseconds (μS) or greater so that the RC time constant circuit cannot track the rise time of ESD events, which are typically in nanoseconds (nS) (Col.3, Lines 32-36). It would have been obvious to one of ordinary skill in the art at the time the invention to implement Mentzer's teachings when calculate parameters of the RC circuit of Chang et al., because it will allow to block ESD event.

5. This action is final.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Benenson whose telephone number is (703) 305-6917. After 1/28/2004 telephone number will be changed to (571) 272-2048. The examiner can normally be reached on M-F (8:20-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (703) 308-3119. After 1/28/2004 telephone number will be changed to (571) 272-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Boris Benenson
Examiner
Art Unit 2836

B.B.

Stephen W. Jackson
12-23-03

STEPHEN W. JACKSON
PRIMARY EXAMINER